

What is Light?

Information to help you understand a bit more about the different types of light...

What is light?

- Light is the form of energy we can see.
- Brightness indicates how much energy it has.



Types of Light

- Two types:
 - Natural
 - Artificial



Natural Light Sources



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The Sun



Fire

Natural Light Sources

- Bioluminescence:
 - Emission of light from a living organism.
 - Living organisms are able to create chemical reactions within their bodies or appendages that create light for communication, finding mates, or evading predators.
 - Example: jellyfish, plankton, humans, etc.



Artificial Light Sources

- Incandescence:
 - When an object gets hot enough to emit light.
 - Example: light bulbs



Artificial Light Sources

- Fluorescent
 - A process where UV light gets absorbed by the particles of an object in order to produce visible light.
 - Examples: fluorescent lights, black lights, neon lights, CFL bulbs.

neon



Artificial Light Sources

- Phosphorescent
 - Emission of light by charged particles after they have been exposed to light energy.
 - Examples: glow stars, glow in the dark items



Artificial Light Sources

- Chemiluminescent
 - Emission of light due to the energetic reaction between two chemicals in a chemical reaction.
 - Examples: glow sticks, flares, etc.



Artificial Light Sources

- Electroluminescent
 - Emission of light when electricity passes through a special type of material called a semiconductor.
 - Examples: LEDs



Mice tagged with a green fluorescent protein.



The gene that codes for fluorescence in some deep sea fish is transferred into the DNA of regular mice.



Let's recap...

INCANDESCENCE – when an object gets hot enough to emit visible light (e.g. light bulb, lava)

FLUORESCENCE – a process where UV light gets absorbed by the particles of an object in order to produce visible light (e.g. neon lights, black lights)

PHOSPHORESCENCE – light energy is absorbed by particles that do not immediately release visible light; caused through radiation (e.g. glow-in-the-dark toys)

CHEMILUMINESCENCE – chemical reactions that produce light (e.g. glowsticks)

BIOLUMINESCENCE – light produced by biological organisms (e.g. fireflies, jellyfish)

ELECTROLUMINESCENCE – emission of light when electricity passes through a special type of material called a semiconductor (e.g. LEDs)